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ABSTRACT

The field of curriculum by inveterate, unexamined, and mistaken reliance on theory has led to incoherence of curriculum and failure and discontinuity in actual schooling because theoretical constructions are ill-fitted and inappropriate to problems of actual teaching and learning. There are three major incompetencies of theory: failure of scope, the vice of abstraction, and radical plurality. A renascence of the field of curriculum will occur only if curriculum energies are diverted from theoretic pursuits to three other modes of operation: the practical, the quasi-practical, and the eclectic. The practical mode differs from the theoretic in many aspects: Its end or outcome is a decision, a selection and guide to possible action. Its subject matter is always something taken as concrete and particular and treated as indefinitely susceptible to circumstance and highly liable to unexpected change. Its problems arise from states of affairs in relation to ourselves. Its method, "deliberation," is not linear but complex, fluid, transactional aimed at identification of the desirable and at either attainment of the desired or alteration of desires. The quasi-practical is an extension of the practical methods and purposes to subject matters of increasing internal variety. The eclectic recognizes the usefulness of theory to curriculum decision, takes account of certain weaknesses of theory as ground for decision, and provides some degree of repair of these weaknesses. (JS)

THE PRACTICAL: A LANGUAGE FOR CURRICULUM

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SCHOOLS FOR THE 70'S

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FOREWORD

The Practical: A Language for Curriculum by Joseph J. Schwab is a contribution to SCHOOLS FOR THE 70'S—AND BEYOND, a major publication and action program under way at the National Education Association's Center for the Study of Instruction (CSI). The purpose of the forthcoming major report is to speak out for the organized profession on alternative ways of solving the problems of teaching and learning, and to engage all NEA members in action programs to improve American education.

SCHOOLS FOR THE 70'S has three parts: a comprehensive, single-volume, multimedia report and action program; a preliminary series of publications by respected authors speaking to the major issues; and a three-volume auxiliary series addressed primarily to curriculum specialists and to university and school researchers. It need hardly be said that Dr. Schwab's book belongs to the auxiliary series, in company with Arlene Payne's *The Study of Curriculum Plans* and *A Selected Guide to Curriculum Literature: An Annotated Bibliography* by Louise Tyler.

Professor Schwab introduced *The Practical: A Language for Curriculum* to the profession at the American Educational Research Association's (AERA) annual convention in February 1969. His provocative views aroused so much interest there that CSI asked him to expand the paper so the NEA could make it available to a wider audience. Those readers who know Joe Schwab will not be surprised at the controversial statements put forth—but then that is the name of the game. CSI may wish to distribute some of the results of the dialogue that this interesting, though academic and abstract, discussion of "the practical" undoubtedly will produce.

Lois Edinger, *Chairman*
CSI Advisory Committee

Ole Sand, *Director*
CSI

THESES AND SYNOPSIS

I shall have three points. The first is this: The field of curriculum is moribund. It is unable, by its present methods and principles, to continue its work and contribute significantly to the advancement of education. It requires new principles which will generate a new view of the character and variety of its problems. It requires new methods appropriate to the new budget of problems.

The second point: The curriculum field has reached this unhappy state by inveterate, unexamined, and mistaken reliance on *theory*. On the one hand, it has adopted theories (from outside the field of education) concerning ethics, knowledge, political and social structure, learning, mind, and personality, and has used these borrowed theories theoretically, i.e., as principles from which to "deduce" right aims and procedures for schools and classrooms. On the other hand, it has attempted construction of educational theories, particularly theories of curriculum and instruction.

These theoretic activities have led to grave difficulties (incoherence of the curriculum, failure and discontinuity in actual schooling) because of the operation of three factors. In the first place, theoretical constructions are, in the main, ill-fitted and inappropriate to problems of actual teaching and learning. Theory, by its very character, does not and cannot take account of all the matters which are crucial to questions of what, who, and how to teach; that is, theories cannot be applied, as principles, to the solution of problems concerning what to do with or for real individuals, small groups, or real institutions located in time and

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space—the subjects and clients of schooling and schools. Second, many of the borrowed theories, even where appropriate, are inadequate, even as theories, to their chosen subjects: Many are incomplete; some (especially of political structure and personality) are doctrinaire. Third, even where a borrowed theory is adequate to its own subject matter, it begs or ignores questions about other subject matters. Theories of personality, for example, beg or ignore problems of social structure and ethics or merely dictate solutions to them. Theories of knowledge usually ignore problems of personality. Yet all these matters (values, social and political structure, mind, knowledge) are involved in schools and schooling, and theories concerning them severally cannot be combined into a unified theory adequately covering all of them except by an enormous extension of the genius and assiduity which yielded the separate theories—a task which might or might not be accomplished in a hundred years.

The third point, which constitutes the main body of my thesis: There will be a renascence of the field of curriculum, a renewed capacity to contribute to the quality of American education, only if curriculum energies are in large part diverted from theoretic pursuits (such as the pursuit of global principles and comprehensive patterns, the search for stable sequences and invariant elements, the construction of taxonomies of supposedly fixed or recurrent kinds) to three other modes of operation. These other modes, which differ radically from the theoretic, I shall call, following tradition, the *practical,* the *quasi-practical,* and the *eclectic.*

The Practical

The radical difference of the practical from the theoretic mode is visible in the fact that it differs from the theoretic not in one aspect but in many: It differs from the theoretic in method. Its problems originate from a different source. Its subject matter is of a distinctly different character. Its outcome is of a different kind.

The end or outcome of the theoretic is knowledge, general or universal statements which are supposed to be true, warranted, confidence-inspiring. Their truth, warrant, or trustworthiness is held, moreover, to be durable and extensive. That is, theoretic statements are supposed to hold good for long periods of time and to apply unequivocally to each member of a large class of occurrences or recurrences. The end or outcome of the practical, on the

other hand, is a *decision,* a selection and guide to possible action. Decisions are never true or trustworthy. Instead, a decision (before it is put into effect) can be judged only comparatively, as probably better or worse than alternatives. After it has been put into effect, it can be judged by its consequences as good or bad, but this is an afterthought and usually sterile as far as further decisions are concerned. A decision, moreover, has no great durability or extensive application. It applies unequivocally only to the case for which it was sought. Applications to other cases proceed only from analogy and turn out to be good ones mainly by chance.

The subject matter of the theoretic is always something taken to be universal or extensive or pervasive and is investigated as if it were constant from instance to instance and impervious to changing circumstance. The most obvious examples are among the subject matters of scientific and mathematical investigation: mass, equivalence, time, class (among the universals); the mammalian thyroid gland, Homo sapiens, igneous rock (among the extensive); electrons and protons (among the pervasive). The subject matter of the practical, on the other hand, is always something taken as concrete and particular and treated as indefinitely susceptible to circumstance, and therefore highly liable to unexpected change: this student, in that school, on the South Side of Columbus, with Principal Jones during the present mayorality of Ed Tweed and in view of the probability of his reelection.

The problems of the theoretic arise from areas of the subject matter marked out by what we already know as areas which we do not yet know. This is to say that theoretic problems are states of mind. Practical problems, on the other hand, arise from states of affairs in relation to ourselves. Specifically, they arise from states of affairs which are marked out by fulfilled needs and satisfied desires as being states which do not satisfy, which hurt us, or which deprive us of more than they confer. They are constituted of conditions which we *wish* were otherwise and we think they *can be made* to be otherwise. (The duality of this origin of practical problems has an important corollary: Practical problems can be settled by changing either the state of affairs or our desires. The latter kind of solution is as legitimate as the former. It follows, then, that practical problems intrinsically involve states of character and the possibility of character change.)

The differences in outcome, subject matter, and origin of problem which distinguish the practical from the theoretic are paralleled by an equally radical difference in method. Theoretic meth-

ods proper (those used directly in the pursuit of knowledge) are numerous, but each of them is characterized by the same defining feature: control by a principle. The principle of a theoretic enquiry determines the general shape of its problem, the kind of data to seek, and how to interpret these data to a conclusion.* In the theoretic, then, the formulation of a good specific problem and the devising of the right experiment may challenge wit and reward genius, but the direction in which the experiment is to go and what is to be done with the data, once collected, are dictated by guiding principle of the enquiry.

The practical has no such guide or rule. We may be conscious that a practical problem exists, but we do not know what the problem is. We cannot be sure even of its subjective side—what it is we want or need. There is still less clarity on the objective side—what portion of the state of affairs is awry. These matters begin to emerge only as we examine the situation which seems to be wrong and begin to look, necessarily at random, for what is the matter. The problem slowly emerges, then, as we search for data, and conversely, the search for data is only gradually given direction by the slow formation of the problem.

At some indeterminate point along the way, as the problem assumes shape and the data search becomes more clearly directed, the character of the process alters. It becomes more of a search for solutions and less of a search for the problem. In this second phase, we envisage alternative actions, consider their possible consequences, and estimate their cost and feasibility. Even here, however, the problem cannot be taken as fixed nor, in consequence, can we rest on our definition of what data are relevant. For the consideration of means determines ends as much as ends determine the search for means. We may have thought, for example, that our problem was one of increasing our income or reallocating resources. However it may prove so difficult to adjust our budget or make more money that we shift our problem to learning how to want less of what money can buy. Then, the data relevant no longer concern only credit, cash, extra pay, and the price of things; relevance suddenly embraces what personal resources of satisfying arts we have yet to discover in ourselves, how they might be

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* For a more complete treatment of the principles of theoretic enquiry, see my "What Do Scientists Do?" *Behavioral Science* 5: 1-27; January 1960 and "The Structure of the Natural Sciences." *The Structure of Knowledge and the Curriculum.* (Edited by G. W. Ford and Lawrence Pugno.) Chicago: Rand McNally & Co., 1964. pp. 31-49.

discovered and developed; how, that is, we can alter our behavioral and emotional habits.

One case of the interplay of ends and means, of problem, data, and solution, deserves special attention: the selected fruits of practical enquiry which go by the name of *policy*. Policy seems to be an exception to the assertion that practical enquiries have no guiding principles, for, in the course of some deliberations, alternative ends or means may be rejected as "contrary to policy." Now, "policy" deserves some degree of special stature, for it is, if properly constructed, a summary of the past effective deliberations of the institution whose policy it is. It is both a memorial to the coherence and continuity of the institution and, to some extent, a guide toward maintenance of that continuity. But policy as a quintessence of past decisions is no better than its origins. It arises in and from *past* deliberations. Deliberations are the better to the extent that they take account of circumstances, but circumstances notoriously change. Hence, policies grow obsolete. A policy may be conceived, indeed, as one part of an institution's circumstance. As such, it is a factor which deliberation must take into account. But, by the same token, it is one of the factors which deliberation must entertain as possibly subject to deliberate change. To some extent, then, policy is a guide to deliberation, but it is, in more than a punning sense, only a practical guide. It can be used only to the extent that present problems and circumstances permit, and sometimes they do not permit at all. Furthermore, it is by deliberation that we determine the relevance of policy to a present situation. Thus policy determines the course of a deliberation no more than deliberation permits.

The method of the practical (called "deliberation" in the loose way we call theoretic methods "induction") is, then, not at all a linear affair proceeding step-by-step, but rather a complex, fluid, transactional discipline aimed at identification of the desirable and at either attainment of the desired or at alteration of desires.

The Quasi-Practical

So much, then, for the practical per se. The distinction of the quasi-practical from the practical per se is partly one of convenience and partly one of substance. It is an extension of practical methods and purposes to subject matters of increasing internal variety. This increasing variety makes it more and more difficult to *be* effectively practical. It is one thing to make wise choices for the instruction of a homogeneous group of children. It is more

difficult and less feasible to make an equally definite and equally wise choice for many groups, each containing children of different ages and different social origins. Firm decisions may be made about rates and ways of integrating one school. Equally firm decisions on the same matter for a whole school system or all the schools of an entire state are likely to be less wise and more difficult to make. The increasingly doubtful character of quasi-practical decisions does not, however, permit us to avoid making them. At least two factors involved in the practical per se (at least, as applied in the field of education) require that we extend its application to more varied, less amenable subject matters.

In the first place, if the practical decisions made by each member-group of a heterogeneous grouping are not to go astray, something approximately practical must be done for the larger collection as a whole. This necessity arises from the fact that actions taken by the member-groups affect one another. Actions have consequences, and the consequences spread beyond the unit for which the decision was made. Consider as obvious examples the consequences on neighboring schools of a unilateral action by one school involving an increase of its salary scale, or the effect on sister disciplines of a cancellation of examinations by the social studies. Indeed, decisions alone, apart from actions and consequences of action, may have effects. Consider the effect on a neighboring community's schools of the mere news that a nearby school community has adopted (or rejected) the "new" science curriculums en masse.

The solution to such problems (of practical guidance for increasingly heterogeneous groupings) is one business of the quasi-practical. The methods appropriate to such problems are the methods of the practical per se plus two special emphases, one concerning the process of decision itself, the other concerning formulation of decisions made. In making choices and decisions for heterogeneous groupings, the special obligation of the quasi-practical is to those areas of pertinent circumstance which vary or are likely to vary from member-group to member-group. It must identify these areas of variation. It must estimate the different directions and degrees of variation likely to occur among the member-groups. It must determine (as far as it is possible to determine anything in the practical) the different ways in which different variations will affect the wisdom of its decision. It must discern some of the ways in which its decision ought to be modified

or qualified in each specific application in order to take best account of each varying circumstance.

In formulating its decisions, the special obligation of this aspect of the quasi-practical is to certain human weaknesses. The process of deliberation is not only difficult and time-consuming, it is also unsatisfying—because there is no point at which it is clear that the course has been completed and completed well. As a result, there is always the temptation in deliberation to look for principles where none exist, to seek "rules" which can be interpreted as requiring that choices of a certain restricted kind be made or as forbidding choices of some kinds. The special obligation of formulation is, then, to communicate the merely *quasi*-practical character of the decision: pointing to some of the considerations which ought to be taken into account in translating it into the practical, suggesting some of the ways in which the decision can be modified in the light of these considerations. The special obligation, in short, is to see to it that quasi-practical decisions are not mistaken for "directives"—either by those who make them or by those who are to translate them into action.

The channels of effect and reaction among similars (6 schools, 10 groups of learners, 4 producers of nickel-steel) which render each such similar vulnerable to the decisions and actions of others constitute one of the factors which require exercise of the quasi-practical. There are also connections among dissimilars, organic connections channeling effect and reaction to an even greater degree. Consider, for example, the relations which exist among divisions of a corporation: research and development, promotion and sales, finance, production. Each can pretend to have merely its own practical problems. These "own" problems are, in one sense, real enough. The practical problems of research and development concern the wise disposition of human talents, the feasibility of one project as opposed to another, the most effective utilization of space and equipment. The problems of sales and promotion are problems of the audiences to be reached and the "messages" delivered to them, problems of pricing, profits and dealer relations, problems of delivery. The practical problems of finance are problems of interest rates and dividends, of foreseeing markets for equities, debentures, bonds, of the repute of the corporation in the financial community and among receivers of dividends.

We have here, however, a patent instance of the extent to which each practical case confronts us, not with a problem clear in its

boundaries and nicely subsumed in one set of terms, but with a cloudy problem-situation. It is part of our practical problem to discern the problem, and we do it well or badly to the extent that we keep our boundaries flexible and our terms fluid. It is *not* wisely practical to conceive the problems of research and development, for instance, as merely problems of disposition of investigative talent and laboratory resources and of the relative feasibilities of projects. A project which uses resources to the full and yields an interesting new device will be a wholly successful project only if the device can be produced and the product marketed. Conversely, the problem of sales and promotion may be less a problem of how best to sell what the corporation makes than a problem of discerning what improvements or revolutions in the product may make it saleable. (If the market for two-channel stereo sound is nearly saturated, let us ask R & D about the possibilities of four-track reproduction.) Each department of the corporation, in short, is not solely responsible for its own problems. Each other department also has a proprietary interest. The terms proper to each department apply also to problems of other departments. The corporation's parts have organic connection.

The same organic connections exist in education. Effective teaching of reading and writing cannot be left only to teachers of reading and writing. The success or failure of such teaching affects and is affected by the reading and writing demanded in science and the social studies. The way in which scientific knowledge is presented to students (as contingent of enquiry, indubitable truth, or *only* indubitable truth) affects the credibility of the content of the humanities and the social studies. The timing of long papers and examinations in one department affects students' performance in other areas. Treatment of literary works as fair reports of the milieu they describe has immediate impact on the teaching of history (and vice versa). Such organic connections ramify into still further reaches. The attitudes praised or otherwise instilled in the social studies become factors in the maintenance of order in the school. The moralities and mores conveyed by the attitudes of all teachers affect the relations of children to the school, of children to their parents, and of parents to the school. The proprieties of language usage imposed by an English teacher, the accents and idioms derided by a science teacher (or merely not understood), the standards of dress and deportment, the demands for docility, the encouragement of prejudices and xenophobias by

any teacher, affect the problems of all and become parts of their problems.

The same kind of organic connections relates (or should relate) the parts of the larger educational establishment. Research into learning and teaching, educational sociology, tests and measurements, and statistical analysis have their practical problems: establishment of priorities among their research projects and allocation of their human and financial resources. Establishment of such priorities takes place, in part, in terms of the progress of the field, the blank spaces in its body of knowledge, the availability of techniques and methods appropriate to its researches. In part, however, problems of priorities in research extend beyond the bounds of the sciences involved. They involve human needs. The presence of a new class of students in the schools posing a new problem in the mastery of the written word is a matter which should concern psychologists and sociologists when they choose what work to do. In general, the needs of a people and the difficulties faced by the institutions which serve these needs are considerations in the guidance of research—in even the "purest" sciences.

The solution to such problems (of organic connections among the diverse organs of the school, the school community, and the educational establishment) constitutes a second business of the quasi-practical. The methods appropriate are, again, the methods of the practical per se but with a heavy special emphasis on the *cherishing of diversity* and the *honoring of delegated powers.*

What is required is that the deliberations narrowly proper to each organ of the system (department of a high school, field of educational research, administrative office, publisher of textbooks) be carried on in part with the help and advice of able representatives of the other organs involved. Deliberation about the physics course requires the comment of the English teacher as well as the teacher of biology, the learning theorist as well as the science educator. Deliberation about allocation of funds among researchers on "creativity," perception of meaning, and enquiry readiness is the business of teachers and school administrators as well as of educational psychologists. In seeking and obtaining such advice, however, each seeker will face a specially heavy intellectual and moral obligation. He will be confronted by unfamiliar vocabularies. He will hear terms which he does not use brought to bear on "his" problems. Considerations which, in his framework, are alien and irrelevant will be raised and debated. His problem will

be to listen, to master the new vocabularies, to appreciate the effect of new terms, and to begin to discern and honor the relevance of "alien" considerations to his problems and his interests. Eventually, his problem will be to discover that the diversity which poses these problems and obligations does, in fact, operate in his interest—since every additional factor taken into account in making a practical decision is one less factor which might otherwise frustrate the success of the ensuing action.

Each representative who gives advice and shares the deliberations on another's problems has a complementary moral and intellectual obligation. In the course of the corporate deliberations he discovers, perhaps for the first time, the existence of numerous remote agencies whose decisions affect his professional life (the teacher, for example, discovers the extent to which textbook publishers, national and private foundations, and other distant executives predetermine the curriculum he will teach). He recognizes corporate deliberations as one of the few means by which he can influence the course of these remote agencies. Meanwhile, from the very act of participation in the deliberations, he acquires an additional sense of proprietorship in the others' problems. Such recognitions by a participant constitute a great temptation to influence the deliberations, not in the direction of the decision best for the organism as a whole, but in the direction which best serves his own part-interest. The same recognitions urge the giver of advice to insist in any way he can that his advice be taken. Yet, in the interest of the whole, the ultimate practical decision, subsequent to the reception of quasi-practical advice, must be taken by the organ which the problem most concerns. From this constellation of factors the special obligation of the giver of advice arises: the honoring of delegated powers.

The Eclectic

The third mode of operation commended to curriculum—the eclectic—recognizes the usefulness of theory to curriculum decision, takes account of certain weaknesses of theory as ground for decision, and provides some degree of repair of these weaknesses.

Whether applied eclectically or not, theory has two major uses in decision making. First and most commonly, theories are used as bodies of knowledge. Skinnerian theory is used, for example, as knowledge of the learning process or Freudian theory is used as knowledge of personality. In this way, theory provides a kind of

shorthand for some phases of deliberation and—rightly or wrongly—frees the deliberator from the necessity of obtaining firsthand information of the subject under discussion. Second, the terms and distinctions which a theory uses for theoretical purposes can be brought to bear practically. For purposes of curricular deliberation, for example, we may bring the Baconian distinction of memory, reason, and imagination to bear to divide subject matters (and curriculum problems) into three corresponding classes: historical, scientific, and literary. Or the ancient differentiation of disciplines into logic, ethics, and science may be applied to separate three classes of educational problems: development of cognitive competencies, development of values and attitudes, and acquisition of knowledge.

The weaknesses of theory arise from two sources: the inevitable incompleteness of the subject matters of theories and the partiality of the view each takes of its already incomplete subject. Incompleteness of subject is easily seen in the entirely cognitive learning theory which takes no account of emotional needs and satisfactions. It is equally visible in economic theories which begin with supply and demand but which are unable to take account of emotional–cultural factors which affect the direction and intensity of demand. (The force of such theoretical delimiting of a subject matter is often so great that the reader of such a sentence as the preceding often recoils with the remark, "But that isn't economics! That's psychology," i.e., the curtailments imposed by theory are treated as real and irreparable.) Incompleteness of subject is also visible in personality theories which reduce the whole of society to an appendage of personality and in sociological theories which reduce personality to an artifact of society. Partiality of view is exemplified by the Freudian treatment of personality after the analogue of a developing, differentiating organism (a treatment which makes it extremely difficult to deal directly with problems of interpersonal relations). It is equally visible in interpersonal theories which make it difficult to deal with autogenous behaviors and feelings. (We shall examine instances of these weaknesses of theory and their wide diffusion again.)

These weaknesses vitiate the value of either of the two uses of theory in the making of decisions. Incompleteness of subject and partiality of view together render the use of theory as a replacement for firsthand information a dangerous procedure. Partiality of view is incorporated in the structure of terms and distinctions of the theory; hence adaptation of the distinctions to other uses

is highly likely to bring with it something of the same partiality. For example, the distinction of development of cognitive competence from development of values and attitudes makes it very difficult to consider ways of education which might put it within the power of some individuals to choose and effect deliberate, rational changes in their felt values and attitudes.

Eclectic operations repair these weaknesses (to some extent) in two ways. First, eclectic operations bring into clear view the particular truncation of subject characteristic of a given theory and bring to light the partiality of its view. Second, eclectic operations permit the serial utilization or even the conjoint utilization of two or more theories on practical problems. The first consequence of the eclectic, even without the second, at least enables us to know what we are doing (and omitting) when we use a theory in practical situations. The first and the second together enable us to make sophisticated use of theories without paying the full price of their incompleteness and partiality.

The eclectic begins by identifying the terms and distinctions which constitute the skeleton (the structure) of a theory—not merely what the terms are but how they are related. In Freudian theory, for example, the initial analysis would disclose not only the centrality of ego-id-superego but also the genetic relations they bear: ego and superego developing out of id and forever bearing with them the stigma of their origin. It would note the primary attachment of pleasure and energy to the id as further consequences of its assumed dominance. It would note the limited potency assigned to the ego and the near-imperviousness assigned to the id as limiting psychotherapy mainly to alteration of the superego and casting society as the villain of the piece. By such means (there are, of course, other terms and relations in Freudian theory omitted from this analysis) the initial analysis reveals the extent to which the Freudian theory is primarily a theory of the vicissitudes of the instincts, that its treatment of sociality is curt and subordinate to its treatment of the "inner" life, that it has little to say about the development of cognitive components of the personality, including those cognitive competences by which the infant begins to differentiate itself from other persons and other things and which only some adults carry far (clearly an important practical matter both for psychotherapy and for education). In addition to noting these curtailments of subject matter, the initial analysis discloses, too, the special bias (partiality of view) imposed on the selection and interpretation of facts by the use in

Freudian theory of the embryological notion of development of psychic organs by differentiation from a primary organ, the id. (It is clear, I hope, that curtailments of subject and partiality of view in Freudian theory are merely illustrative of curtailments and biases in theory generally, and not peculiar weaknesses of Freud.)

After such a primary analysis, the eclectic may go in either of two directions. It may concern itself with competing theories of one or similar subject matters (for example, some of the considerable variety of personality theories). Or it may concern itself with theories constructed in other sciences to deal with subject matters omitted from the theory initially treated (for example, theories of learning, theories of culture, and theories of society, supposing these matters to have been dealt with curtly or not at all by the theory initially treated).

In the former case (treating differing theories of similar subject matters), comparison of the different sets of terms with one another and with their approximately common subject matters makes it possible to identify a set of elements shared among all the theories examined, and embodied (though differently) in each theory's set of terms. This set of common elements then makes it possible to discriminate and relate the biases of each theory: what its terms illuminate, what light cast by others' terms it fails to shed, what aspects of the subject it brings to the foreground, and what it thrusts into the background. In brief, this branch of eclectic method makes it possible to see what each member of the collection of theories does and does not do with and to their approximately common subject matter.

This knowledge makes it possible to apply different competing theories *appropriately* to different practical problems. It also makes it possible to discriminate what can be treated in deliberation by the shorthand of extant theory and what must be left to the harder labor of deliberation. It even makes it possible to bring two or three different theories of the same subject matter (which, as theories, are mutually exclusive) to bear on the same practical problem. Thus, materials which could otherwise be treated only as source for a merely "preferred," doctrinaire choice, or as a mere conspectus of incomplete "opinions," are converted by this powerful branch of the eclectic into a battery of varied and useful tools. (The eclectic does *not* make it possible to combine the alternative theories into one coherent theory. An inventive genius may profit from an eclectic analysis, but for the invention of a single coherent theory, genius is still required.)

The second branch of eclectic method (which treats theories of different but related subject matters) proceeds by analogous methods to somewhat different ends. Comparison of sets of terms and subject matters found in these theories makes it possible to determine, for a given theory, what violence it has done its chosen subject in order to disconnect it from related subjects and give it the appearance of an independent whole. The complementary violence done to the remaining, "other" subject mass is similarly identified. Third, the points of possible contact between the selected subject and "adjacent" subjects which have *not* been polished into invisibility are identified. One theory of personality, for example, is found to have separated "personality" from "society" and given independent wholeness to "personality" by (a) positing the incorporation of one feature of sociality *into* personality at an early age; (b) treating most of the remainder of "society" as only an unpleasant but necessary arrangement for procurement of food, shelter, and protection; and (c) converting conjoint work and play into mere preludes or substitutes for sexual gratification. One group of social theories gives society the appearance of completeness by rendering personality almost entirely as a reflection of social action and social need, and by treating instinctual needs as trivial or as important only in infancy.

The second branch of the eclectic thus makes possible the practical conjunction of some theories of one part-subject with some theories of other part-subjects without having to wait on a unified theory of the united whole.

ARGUMENT AND COROLLARIES

We turn now to the evidence and argument in support of the views here summarized and to examination of some of the ways in which the proposed modes of operation—especially the practical—might operate in curriculum and for the education of teachers and curriculum workers.

Crises of Principle in General

The frustrated state of the field of curriculum is not a sickness peculiar to that field nor is it a condition which warrants guilt or shame on the part of curriculum practitioners. All fields of systematic intellectual activity are marked by rhythms which involve such crises. The crises arise because any intellectual discipline must begin its endeavors with *untested* principles. In its beginnings, its subject matter is relatively unknown, its problems unsolved, indeed, unidentified. It does not know what questions to ask, what other knowledge to rest upon, what data to seek, or what to make of them once they are elicited. Any new field requires a preliminary and necessarily untested guide to its enquiries. It finds this guide by borrowing, by invention, or by analogy, in the shape of a hazardous commitment to the character of its problems or its subject matter and an additional commitment to untried canons of evidence and rules of enquiry. An early version of sociology, for example, chose "the city" as its subject and conceived of the city in terms borrowed from physics and physiology. From physiology it took the notion of organism, thus conceiving the city as an outcome of the operation of laws of growth, maturation, and aging inherent in it. From physics it borrowed the notions of point-sources of force and of fields of influence surrounding such points. Consequently, it sought the laws of growth and deterioration of cities, and tried to locate the focal points of their growth and deterioration and further laws expressing the rates at which the fields of growth and deterioration spread outward from these points.

What follows such commitments to principles of enquiry are years of their application, pursuit of the mode of enquiry demanded by the principles to which the field has committed itself. For example, the sociologists who committed themselves to an organic view of cities spent years gathering and studying statistics on the changes which ensued on the establishment of industrial developments, business districts, and successive waves of immigration and changes in the economic status of the inhabitants of streets and neighborhoods.

To the majority of practitioners of any field, these years of enquiry appear only as pursuit of knowledge of its subject matter or solution of its problems. They take the guiding principles of the enquiry as givens. These years of enquiry are, however, something more than pursuit of knowledge or solution of problems. They also serve as tests, reflexive and pragmatic, of the principles which guide the enquiries. The years of enquiry determine whether the data demanded by the principles can, in fact, be elicited and whether, if elicited, they can be made to constitute knowledge adequate to the complexity of the subject matter or solutions which, in fact, do solve the problems with which the enquiry began. Organismic sociology spent more than a decade collecting its data, making growth maps of city after city, and searching for regularities among these maps.

In the nature of the case, these reflexive tests of the principles of enquiry more often than not are partially or wholly negative. After all, the commitment to these principles was made before there were well-tested fruits of enquiry by which to guide the commitment. Inadequacies of principle begin to show, in the case of theoretical enquiries, by failures: failure of the subject matter to respond to the questions put to it; incoherencies and "contradictions" in data and in conclusions which cannot be resolved; or by clear disparities between the knowledge yielded by the enquiries and the behaviors of the subject matter which the knowledge purports to represent. Organismic sociology, for example, had no trouble in finding its data, but it found, too, that these data were shot through and through with incoherences, that few regularities were disclosed, and that these few were wholly inadequate as representations of the complex changes which cities underwent. In the case of practical enquiries, inadequacies (bad habits of deliberation) begin to show by incapacity to arrive at solutions to the problems, by inability to realize the solutions proposed, by frustrations and cancelings out as solutions are put into effect.

Although these exhaustions and failures of principle and method may go unnoted by practitioners in the field, at least at the conscious level, what may not be represented in consciousness is nevertheless evidenced by practitioners' behavior and appears in the literature and the activities of the field as signs of the onset of a crisis. These signs consist of a large increase in the frequency of published papers and colloquiums marked by *a flight from the subject of the field.* There are usually six signs of this flight or directions in which the flight occurs.

The first and most important, though often least conspicuous, is a flight of the field itself, a translocation of its problems and the solving of them from the nominal practitioners of the field to other men. Thus, one crucial frustration of the science of genetics was resolved by a single contribution from an insurance actuary. The recent infertility of academic physiology has been marked by a conspicuous increase in the frequency of published solutions to physiological problems by medical researchers. In similar fashion, the increasing depletion of psychoanalytic principles and methods in recent years was marked by the onset of contributions to its lore by internists, biochemists, and anthropologists.

A second flight is a flight upward, from discourse about the subject of the field to discourse about the discourse of the field, from use of principles and methods to *talk* about them, from grounded conclusions to the construction of models, from theory to metatheory, and from metatheory to meta-metatheory. In physics, for example, Einstein, Max Planck, and Niels Bohr had demonstrated to the satisfaction of many physicists, in the years 1900-13, that the "laws" of classical electrodynamics and mechanics did not hold for the behavior of electrons within the atom or even for events following collision between free electrons and electrons in the atom. In the years following, the journals were overwhelmed by proposed alternative models of the atom, papers attacking these models as metaphysically impossible, papers attacking and defending the possibility that entirely different laws might govern large particles and small ones, and still other papers attempting to reconcile the two states of affairs.

A third flight is downward, an attempt by practitioners to return to the subject matter in a state of innocence, shorn, not only of current principles, but of all principles, in an effort to take a new, pristine, and unmediated look at the subject matter. For example, one conspicuous reaction to the warfare of numerous inadequate principles in experimental psychology has been the resurgence of

ethology, which begins as an attempt to return to a pure natural history of behavior, to intensive observation and recording of the behavior of animals undisturbed in their natural habitat by observers equally undisturbed by mediating conceptions, who attemp to record anything and everything they see before them.

A fourth flight is to the sidelines, to the role of observer, commentator, historian, and critic of the contributions of others to the field.

A fifth sign consists of marked perseveration, a repetition of old and familiar knowledge in new languages which add little or nothing to the old meanings embodied in the older and more familiar language, or repetition of old and familiar formulations by way of criticism or minor additions and modifications.

The sixth is a marked increase in eristic, contentious, and *ad hominem* debate. Consider, for example, the warfare of words among contending exponents of different theories of personality. Freudians, existentialists, Gestaltists, and defenders of ego theories are not only meticulous in pointing out the errors and omissions of their colleagues, they are also assiduous in suggesting their shortcomings of character, morals, and intelligence.

I hasten to remark that these signs of crisis are not all or equally reprehensible. There is little excuse for the increase in contentiousness nor much value in the flight to the sidelines or to perseveration, but the others, in one way or another, can contribute to resolution of the crisis. The flight of the field itself is one of the more fruitful ways by which analogical principles are disclosed, modified, and adapted to the field in crisis. The flight upward, to models and metatheory, if done responsibly, becomes, in fact, the proposal and test of possible new principles for the field. (Responsible proposal has certain defining marks. In the first place, models are constructed and proposed for the solution of clearly defined and formulated unsolved problems in the field. They are not constructed merely at random or proposed merely because they are new. Second, responsible proposals are accompanied by clear indications of how and where the research they require might be instituted. Ideally, they are accompanied by an instance of their use: the actual solution of a previously difficult problem by means of the new conception.) The flight backward, to a state of innocence, is at least an effort to break the grip of old habits of thought and thus leave space for needed new ones, though it is clear that in the matter of enquiry, as elsewhere, lost virginity cannot be regained.

In the present context, however, the virtue or vice of these various flights is beside the point. We are concerned with them as signs of collapse of principles in a field, and it is my contention, based on a study not yet complete, that most of these signs can now be seen in the field of curriculum. I shall only suggest, not cite, my evidence.

Crises of Principle in Curriculum

With respect to flight of the field itself, there can be little doubt. Of the five substantial high school science curriculums, four of them—PSSC, BSCS, CHEMS, and CBA—were instituted and managed by subject matter specialists; the contribution of educators was small and that of curriculum specialists near the vanishing point. Only Harvard Project Physics, at this writing not yet available, appears to be an exception. To one of two elementary science projects, a psychologist appears to have made a substantial contribution but curriculum specialists very little. The other—the Elementary Science Study—appears to have been substantially affected (to its advantage) by educators with one or both feet in curriculum. The efforts of the Commission on Undergraduate Education in the Biological Sciences have been carried on almost entirely by subject matter specialists. The English Curriculum Study Centers appear to be in much the same state as the high school science curriculums: overwhelmingly centered on the work of subject specialists. Educators contribute expertise only in the area of test construction and evaluation, with a contribution here and there by a psychologist. Educators, including curriculum specialists, were massively unprepared to cope with the problem of integrated education, and only by little, and late, and by trial and error, put together the halting solutions currently known as Head Start. The problem posed by the current drives toward ethnicity in education finds curriculum specialists even more massively oblivious and unprepared. And until recently I found myself alone with respect to the curriculum problems immanent in the phenomena of student protest and student revolt. (Of the social studies curriculum efforts, I shall say nothing at this time.)

On the second flight—upward—I need hardly comment. The models, the metatheory, and the meta-metatheory are all over the place. Many of them, moreover, are irresponsible in that they are concerned less with the barriers to continued productivity in the field of curriculum than with exploitation of the exotic and the fashionable among forms and models of theory and metatheory:

for example, systems theory, symbolic logic, language analysis. Many other models, including responsible ones, are irreversible flights upward or sideways. That is, they are not models or metatheories concerned with the judgment, the reasoned construction, or the reconstruction of curriculums, but with other matters—e.g., how curriculum changes occur or how changes can be managed. In this respect, they are almost patent confessions of impotence in the face of curricular problems. They come close to suggesting that what ought to be done about curriculums is the business of some other expert, that the actual institution of curricular changes is the business of still another group of workers, and that the business of the curriculum specialist is only to observe these others working in the hope of finding rules or laws of their operations.

The flight downward, the attempt at return to a pristine, unmediated look at the subject matter, is, for some reason, missing in the case of curriculum. There are returns—to the classroom, if not to other levels or aspects of curriculum—with a measure of effort to avoid preconceptions (e.g., the work of Smith and Bellack, and the studies of communication nets and lines), but the frequency of such studies has not markedly increased. The absence of this symptom may be significant. In general, however, it is characteristic of diseases that the whole syndrome may not appear in all cases. Hence, pending further study and thought, I do not count this negative instance as weakening the diagnosis of a crisis of principle.

The fourth flight—to the sidelines—is again a marked symptom of the field of curriculum. Histories, anthologies, commentaries, and criticisms of curriculums and proposed curriculums multiply.

Perseveration is also marked. I recoil from counting the persons and books whose lives are made possible by continuing restatement of the Tyler rationale or of the character and case for behavioral objectives or of the virtues and vices of John Dewey.

The rise in frequency and intensity of the eristic and *ad hominem* is also marked. Thus, one author climaxes a series of petulances by remarking that what he takes to be his own forte "has always been rare—and shows up in proper perspective the happy breed of educational reformer who can concoct a brand-new, rabble-rousing theory of educational reform while waiting for the water to fill the bathtub."

There is little doubt, in short, that the field of curriculum is in a crisis of principle.

A crisis of principle arises, as I have suggested, when principles are exhausted—when the questions they permit have all been asked and answered, or when the efforts at enquiry instigated by the principles have at last exhibited their inadequacy to the subject matter and to the problems they were designed to attack. My second point is that the latter holds in the case of curriculum: The curriculum movement has been inveterately theoretic and its theoretic bent has let it down. A brief conspectus of instances will suggest the extent of this theoretic bent.

Incompetences of Theory: Failure of Scope

Consider first the early, allegedly Herbartian efforts (recently revived by Bruner). These efforts took the view that ideas were formed by children out of received notions and experiences of things, and that these ideas functioned thereafter as discriminators and organizers of what was later learned. Given this view, the aim of curriculum was to discriminate the right ideas, (by way of analysis of extant bodies of knowledge) determine the order in which they could be learned by children as they developed, and thereafter present them at the right times with clarity, associations, organization, and application. A theory of mind and of knowledge thus solves by one mighty coup the problem of what to teach, when, and how; what is fatally theoretic here is not merely the presence of a theory of mind and a theory of knowledge, though that presence is part of the story, but the dispatch, the sweeping appearance of success, the vast simplicity which grounds this purported solution to the problem of curriculum. And lest we think that this faith in the possibility of successful neatness, dispatch, and sweeping generality is a mark of the past, consider the concern of the National Science Teachers Association only four years ago with (italics mine) "identifying the broad principles that can apply to *any and all* curriculum development efforts in science," a concern crystallized in just seven "conceptual schemes" held to underlie all science. With less naïveté but with the same steadfast concern for a single factor—in this case, a supposed fixed structure of knowledge—one finds similar efforts arising from the National Society of College Teachers of Education, from historians, even from teachers of literature.

Consider, now, some of the numerous efforts to base curriculum on derived objectives. One effort seeks to ground its objectives in social need and finds its social needs in just those facts about its culture which are sought and found under the aegis of a single

conception of culture. Another grounds its objectives in the social needs identified by a single theory of history or politics. Consider, for example, the following two:

> First, there is the goal of a world-wide democracy or a series of democracies. . . . Second, . . . the goal of a world government with authority to enforce its mandates . . . the crucial problems of political, economic, religious, esthetic and educational life should be brought into the center of the curriculum. . . .*

> In every changing culture of the world today, two insistent problems should engage the attention of educators: (1) What are the concepts and problems of our changing civilization which should constitute both the needed social program of action and the outline of the educational program? (2) What are the elements of a creative philosophy which shall be appropriate for the new social order? . . . Thus through the schools of the world, we shall disseminate a new conception of government—one that will embrace all of the collective activities of men. . . .**

(Currently, we are more likely to find "participative democracy," anarchy, or minority rule instead of Marxism or Wilson-Roosevelt liberalism as the one true doctrine—but the point is the same.)

A third group of searches for objectives is grounded in theories of personality. The seductive coherence and plausibility of Freudianism persuade its followers to aim to supply children with adequate channels of sublimation of surplus libido, appropriate objects and occasions for aggressions, a properly undemanding ego ideal, and an intelligent minimum of taboos. Interpersonal theories, on the other hand, direct their adherents to aim for development of abilities to relate to peers, inferiors, and superiors in relations nurturant and receiving, adaptive, vying, approving, and disapproving. Theories of actualization instruct their adherents to determine the salient potentialities of each child and to see individually to the development of each.

Still other searches for objectives seek their aims in the knowledge needed to "live in the modern world," in the attitudes and habits which minimize dissonance with the prevailing mores of one's community or social class, in the skills required for success

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* Brameld, Theodore. "A Reconstructionist View of Education." *Philosophies of Education.* (Edited by Philip H. Phenix.) New York: John Wiley & Sons, 1961. p. 106.

** Rugg, Harold. "Social Construction Through Education." *Readings in the Philosophy of Education.* (Edited by John M. Rich.) Belmont, Calif.: Wadsworth Publishing Co., 1966. p. 112.

in a trade or vocation, or in the ability to participate effectively as members of a group. Still others are grounded in some quasi-ethics, some view of the array of goods which are good for man.

Three features of these typical efforts at curriculum making are significant here, each of which has its own lesson to teach us. First, each is grounded in a theory as such. We shall return to this point in a moment. Second, each is grounded in a theory from the social or behavioral sciences: psychology, psychiatry, politics, sociology, or history. Even the ethical bases and theories of "mind" are behavioral. To this point, too, we shall return in a moment. Third, each theory concerns a *different* subject matter. One curriculum effort is grounded in concern only for the individual, another in concern only for groups, others in concern only for cultures, *or* communities, *or* societies, *or* minds, *or* the extant bodies of knowledge.*

The significance of this third feature is patent to the point of embarrassment: No curriculum, grounded in but one of these subjects, can possibly be adequate or defensible. A curriculum based on a theory about individual personality which thrusts society, its demands, and its structure far into the background or which ignores them entirely can be nothing but incomplete and doctrinaire, for the individuals in question are in fact members of a society and must meet its demands to some minimum degree since their existence and prosperity as individuals depend on the functioning of their society. In the same way, a curriculum grounded only in a view of social need or social change must be equally doctrinaire and incomplete, for societies do not exist only for their own sakes but for the prosperity of their members as individuals as well. In the same way, learners are not only minds or knowers but also bundles of affects, individuals, personalities, and earners of livings. They are not only group interactors but also possessors of private lives.

It is clear, I submit, that a defensible curriculum or plan of curriculum must be one which somehow takes account of all these

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* It should be clear by now that "theory" as used in this paper does *not* refer only to grand schemes such as the General Theory of Relativity, kinetic-molecular theory, the Bohr atom, the Freudian construction of a tripartite psyche. The attempt to give an account of human maturation by the discrimination of definite states (e.g., oral, anal, genital) and the effort to aggregate human competences into a small number of primary mental abilities—these too are theoretic. So also are efforts to discriminate a few large classes of persons and to attribute to them defining behaviors: e.g., the socially mobile, the culturally deprived, the creative.

sub-subjects which pertain to man. It cannot take only one and ignore the others; it cannot even take account of many of them and ignore one. Each of them is not only one of the constituents and one of the conditions of decent human existence but each also interpenetrates some or all of the others. That is, the character of human personality is one of the determiners of human association and the behavior of human groups. Conversely, the conditions of group behavior and the character of a culture or society determine in some large part the personalities which their members develop, the way their minds work, and what they can learn and use by way of knowledge and competence. Even the patterns of scientific enquiry are determined to some extent by social conditions (especially economic ones) and by the personalities attracted to science in a given culture. These various "things" (individuals, societies, cultures, patterns of enquiry, structures of knowledge or of enquiries, apperceptive masses, problem solving), though discriminable as separate subjects of differing modes of enquiry, are nevertheless parts or affectors of one another or coactors. (Their very separation for purposes of enquiry is what marks the outcomes of such enquiries as "theoretic" and consequently incomplete.) In practice, they constitute one complex, organic agency. Hence, a focus on only one not only ignores the others but vitiates the quality and completeness with which the selected one is viewed.

It is equally clear, however, that there is not, and will not be in the foreseeable future, one theory of this complex whole which is other than a collection of unusable generalities. Nor it it true that the lack of a theory of the whole is due to the narrowness, the stubbornness, or the merely habitual specialism of social and behavioral scientists. Rather, their specialism and the restricted purview of their theories are functions of their subject, its enormous complexity, its vast capacity for difference and change. Even the relatively simple and highly uniform subject matter of mechanics had to wait centuries for development of principles of enquiry adequate to the behavior of physical bodies in motion. Physiology has only recently developed shifts of principle which take account of an order of complexity of the animal body beyond that represented by the simple and ancient notions of structure and function. Human behavior, whether one-to-one or in groups, is of a still higher order of complexity, vastly more difficult to encompass in a usefully viable set of ideas. There have been efforts to conceive principles of enquiry which would encompass the whole

variety and complexity of humanity, but they have fallen far short of adequacy to the subject matter or have demanded the acquisition of data and modes of interpretation of data beyond our capabilities. There are successful efforts to find bridging terms which would relate the principles of enquiry of one subfield of the social sciences to another and thus begin to effect connections among our knowledges of each, but the successful bridges are few and narrow to date and permit but little connection. As far, then, as theoretical knowledge is concerned, we must wrestle as best we can with numerous, largely unconnected, separate theories of these many, artificially discriminated sub-subjects of man.

I remarked in the beginning that renewal of the field of curriculum would require diversion of the bulk of its energies from theory to the practical, the quasi-practical, and the eclectic. The state of affairs just described, the existence and the necessarily continuing existence of separate theories of separate sub-subjects distributed among the social sciences, constitutes the case for one of these, the necessity of an eclectic, of arts by which a usable focus on a common body of problems is effected among theories which lack theoretical connection. The argument can be simply summarized. A curriculum grounded in but one or a few sub-subjects of the social sciences is indefensible; contributions from all are required. There is no foreseeable hope of a unified theory in the immediate or middle future, nor of a metatheory which will tell us how to put them together or order them in a fixed hierarchy of importance to the problems of curriculum. What remains as a viable alternative is the unsystematic, uneasy, pragmatic, and uncertain unions and connections which can be effected in an eclectic. And I must add, anticipating our discussion of the practical, that *changing* connections and *differing* orderings at different times of these separate theories will characterize a sound eclectic.

The whole character of eclectic arts and procedures must be left for discussion on another occasion. Let it suffice for the moment that witness of the high effectiveness of eclectic methods and of their accessibility is borne by at least one field familiar to us all—Western medicine. It has been enormously effective and the growth of its competence dates from its disavowal of a single doctrine and its turn to eclecticism.

Incompetences of Theory: The Vice of Abstraction

I turn now from the fact that the theories which ground curriculum plans pertain to different sub-subjects of a common field to

the second of the three features which characterize our typical instances of curriculum planning—the fact that the ground of each plan is a theory as such.

The significance of the existence of theory as such at the base of curricular planning lies in what that theory does not and cannot encompass. All theories, even the best of them in the simplest sciences, necessarily neglect some aspects and facets of the facts of the case. A theory covers and formulates the *regularities* among the things and events it subsumes. It abstracts a general or ideal case. It leaves behind the nonuniformities, the particularities, which characterize each concrete instance of the facts subsumed. Moreover, in the process of idealization, theoretical enquiries may often leave out of consideration conspicuous facets of *all* cases because its substantive principles of enquiry or its methods cannot handle them. Thus, the constantly accelerating body of classical mechanics was the acceleration of a body in "free" fall, fall in a perfect vacuum, and the general or theoretical rule formulated in classical mechanics is far from describing the fall of actual bodies in actual mediums—the only kinds of fall then known. The force equation of classical dynamics applied to bodies of visible magnitude ignores friction. The rule that light energy received varies inversely as the square of the distance holds exactly only for an imaginary point-source of light. For real light sources of increasing expanse, the so-called law holds more and more approximately and for very large sources, it affords little or no usable information. And what is true of the best of theories in the simplest sciences is true *a fortiori* in the social sciences. Their subject matters are apparently so much more variable, and clearly so much more complex, that their theories encompass much less of their subjects than do the theories of the physical and biological sciences.

Yet curriculum is brought to bear, not on ideal or abstract representations, but on the real thing, on the concrete case, in all its completeness and with all its differences from all other concrete cases on a large body of fact concerning which the theoretic abstraction is silent. The materials of a concrete curriculum will not consist merely of portions of "science," of "literature," of "process." On the contrary, their constituents will be particular assertions about selected matters couched in a particular vocabulary, syntax, and rhetoric. They will be particular novels, short stories, or lyric poems, each, for better or for worse, with its own flavor. They will be particular acts upon particular matters in a given sequence. They will be perceptions conditioned by particular past

conditionings of particular things and events. The curriculum constructed of these particulars will be brought to bear, not in some archetypical classroom, but in a particular locus in time and space with smells, shadows, seats, and conditions outside its walls which may have much to do with what is achieved inside. Above all, the supposed beneficiary is not the generic child, not even a class or kind of child out of the psychological or sociological literature pertaining to the child. The beneficiary will consist of very local kinds of children and, within the local kinds, individual children. The same diversity holds with respect to teachers and what they do.

The generalities about science, about literature, about children in general, about children or teachers of some specified class or kind, may be true, but they attain this status in virtue of what they leave out. The matters omitted vitiate the practical value of theory in two ways. They are not only in themselves often matters of importance; they also modify, by their presence, the general characteristics encompassed in the theories. A species of some genus is characterized, not only by specific traits added on to the generic, but also by modifications and qualifications of the generic traits by the specific ones. A Guernsey cow is not only something *more* than a cow-in-general; some of its generally cow-y traits are modified by its Guernseyness.

These ineluctable characteristics of theory and the consequent disparities between real things and their representation in theory constitute one argument for my thesis that a large bulk of curriculum energies must be diverted from the theoretic, not only to the eclectic but to the practical and the quasi-practical. The argument, again, can be briefly summarized. The stuff of theory is abstract or idealized representations of real things. But curriculum in action treats real things: real acts, real teachers, real children, things richer than and different from their theoretical representations. Curriculum will deal badly with its real things if it treats them merely as replicas of their theoretic representations. If, then, theory is to be used well in the determination of curricular practice, it requires a supplement. It requires arts which bring a theory to its application: first, arts which identify the disparities between real thing and theoretic representation; second, arts which modify the theory in the course of its application in the light of the discrepancies; and third, arts which devise ways of taking account of the many aspects of the real thing which the theory does not take into account. These are some of the arts of the practical.

Incompetences of Theory: Radical Plurality

The significance of the third feature of our typical instances of curriculum work—that their theories are mainly theories from the social and behavioral sciences—will carry us to the remainder of the argument toward the practical. Nearly all theories in all the behavioral sciences are marked by the coexistence of competing theories. There is not one theory of personality but many, representing at least six radically different choices of what is relevant and important in human behavior. There is not one theory of groups but several. There is not one theory of learning but half a dozen. All the social and behavioral sciences are marked by "schools," each distinguished by a different choice of principle of enquiry, each of which selects from the intimidating complexities of the subject matter the small fraction of the whole with which it can deal.

The theories which arise from enquiries so directed are, then, radically incomplete, each of them incomplete to the extent that competing theories take hold of different aspects of the subject of enquiry and treat it in a different way. Further, there is perennial invention of new principles which bring to light new facets of the subject matter, new relations among the facets, and new ways of treating them. In short, there is every reason to suppose that any one of the extant theories of behavior is a pale and incomplete representation of actual behavior.

There is similar reason to suppose that if all the diversities of fact, the different aspects of behavior treated in each theory, were somehow to be brought within the bounds of a single theory, that theory would still fall short of comprehending the whole of human behavior—and in two respects. In the first place, it would not comprehend what there may be of human behavior which we do not see in virtue of the restricted light by which we examine behavior. In the second place, such a single theory will not only seek its data in the restricted light of its principles, it will also necessarily *interpret* its data in the light of its *one* set of principles, assigning to these data only one set of significances and establishing among them only one set of relations. It will remain the case, then, that a diversity of theories may tell us more than a single one, even though the "factual" scope of the many and the one is the same.

It follows that such theories are not, and will not be, adequate by themselves to tell us what to do with actual human beings or

how to do it. What they variously suggest and the contrary guidances they afford to choice and action must be mediated and combined by eclectic arts and must be massively supplemented, as well as mediated, by knowledge of some other kind derived from another source.

Some areas of choice and action with respect to human behavior have long since learned this lesson. Government is made possible by a lore of politics derived from immediate experience of the vicissitudes and tangles of legislating and administering. The institution of economic guidances and controls owes as much to unmediated experience of the marketplace as it does to formulas and theories. Even psychotherapy has long since deserted its theories of personality as sole guides to therapy and relies as much or more on the accumulated, explicitly nontheoretic lore accumulated by practitioners as it does on theory or eclectic combinations of theory. The law has systematized the accumulation of direct experience of actual cases in its machinery for the recording of cases and opinions as precedents which continuously monitor, supplement, and modify the meaning and application of its formal knowledge, its statutes. It is this recourse to accumulated lore, to experience of actions and their consequences, to action and reaction at the level of the concrete case, which constitutes the heart of the practical. It is high time that curriculum do likewise.

Practical Curriculum: Assessment and Change of Curriculum

Because the arts of the practical are onerous and complex, only a sampling can be added here to what we have already indicated of its character. I shall deal briefly with only four aspects of it, together with some of the changes in educational investigation which would ensue on adoption of its discipline.

The practical arts begin with the requirement that existing institutions and existing practices be preserved and altered piecemeal, not dismantled and replaced. Changes must be so planned and so articulated with what remains unchanged that the functioning of the whole remains coherent and unimpaired. These necessities stem from the very nature of the practical—its concern with the maintenance and improvement of patterns of purposed action, and especially its concern that the effects of the pattern through time shall retain coherence and relevance with one another.

This is well seen in the case of the law. Statutes are properly repealed or largely rewritten only as a last resort, since to do so

creates diremption between old judgments under the law and judgments to come, and the resulting confusion must lead either to weakening of law through disrepute or a painful and costly process of repairing the effects of past judgments so as to bring them into coherence with the new. It is vastly more desirable that changes be instituted in small degrees and in immediate adjustment to the peculiarities of particular new cases which call forth the change. Consider, as a particularly clumsy case in point, the release of known and convicted murderers, some of them threats to society, in consequence of a Supreme Court ruling on the conditions for admission of confession as evidence.

The consequence, in the case of the law, of these demands of the practical is that the servants of the law must know the law through and through. They must know the statutes themselves and the progression of precedents and interpretations which have effected changes in the statutes, and they must especially know the present state of affairs: the most recent decisions under the law and the calendar of cases which will be most immediately affected by contemplated additions to precedent and interpretation.

The same requirements would hold for a practical program of improvement of education. It, too, would effect its changes in small progressions, in coherence with what remains unchanged, and this would require that we know *what is and has been going on in American schools.*

At present, we do not know. My own incomplete investigations convince me that we have not the faintest reliable knowledge of how literature is taught in the high schools or what actually goes on in science classrooms. There are a dozen different ways in which the novel can be read. Which ones are used by whom, with whom, and to what effect? What selections from the large accumulation of biological knowledge are made and taught in this school system and that, to what classes and kinds of children, and to what effect? To what extent is science taught as verbal formulas, or as congeries of unrelated facts, or as so-called principles and conceptual structures, or as outcomes of enquiry? With what degree and kind of simplification and falsification is scientific enquiry conveyed, if it is conveyed at all?

A count of textbook adoptions will not tell us, for teachers select from textbooks and alter their treatment (often, quite properly), and can frustrate and negate the textbook's effort to control the pattern of instruction. We cannot tell from lists of objectives, since they are usually so ambiguous that almost anything can go

on under their aegis and, if not ambiguous, reflect pious hopes as much as actual practice. We cannot tell from lists of "principles" and "conceptual structures," since these, in their telegraphic brevity, are also ambiguous and say nothing of the way they are taught or the extent.

What is wanted is a totally new and extensive pattern of *empirical* study of classroom action and reaction; a study, not as basis for theoretical concerns about the nature of the teaching or learning process, but as a basis for beginning to know what we are doing, what we are not doing, and to what effect; what changes are needed, which needed changes can be instituted with what costs or economies, and how they can be effected with minimum tearing of the remaining fabric of educational effort.

This is an effort which will require new mechanisms of empirical investigation, new methods of reportage, a new class of educational researchers, and much money. It is an effort without which we will continue largely incapable of making defensible decisions about curricular changes, largely unable to put them into effect, and ignorant of what real consequences, if any, our efforts have had.

A very large part of such a study would, I repeat, be direct and empirical study of action and reaction in the classroom itself, not merely the testing of student change. But one of the most interesting and visible alterations of present practice which might be involved is a radical change in our pattern of testing students. The common pattern tries to determine the extent to which *intended* changes have been brought about. This would be altered to an effort to find out what changes have occurred, to determine side effects as well as main consequences, since the distinction between these two is always in the eye of the intender and side effects may be as great in magnitude and as baneful or healthful for students as the intended effects.

A second facet of the practical: Its actions are undertaken with respect to identified frictions and failures in the machine and to inadequacies evidenced in felt shortcomings of its products. This origin of its actions leads to two marked differences in operation from that of theory. Under the control of theory, curricular changes have their origin in new notions of person, group or society, mind or knowledge, which give rise to suggestions of new things curriculum might be or do. By its nature, this origin takes little or no account of the existing effectiveness of the machine or the consequences to this effectiveness of the institution of novelty.

If there is concern for what may be displaced by innovation or for the incoherences which may ensue on the insertion of novelty, the concern is gratuitous. It does not arise from the theoretical considerations which commend the novelty. This characteristic of theory-instigated change is one of the factors leading centrally to the bandwagon phenomenon in American public education: the wholesale but short-term adoption (or pseudo-adoption) of enquiry teaching, creative training, programing, and what not. The practical, on the other hand, because it institutes changes to repair frictions and deficiencies, is *commanded* to determine the whole array of possible effects of proposed change, to determine what new frictions and deficiencies the proposed change may unintentionally produce.

The other effective difference between theoretical and practical origins of change is patent. Theory, by being concerned with *new* things to do, is unconcerned with the successes and failures of present doings. Hence present failures, unless they coincide with what is altered by the proposed innovations, go unnoticed—as do present successes. The practical, on the other hand, is directly and deliberately concerned with the diagnosis of ills of the curriculum.

These concerns of the practical for frictions and failures of the curricular machine would, again, call for a new and extensive pattern of enquiry. They require curriculum study to seek its problems where its problems lie—in the behaviors, misbehaviors, and nonbehaviors of its students as they begin to show the effects of the training they did and did not get. This means continuing assessment of students as they leave primary grades for the secondary school, secondary school for jobs and colleges. It means sensitive and sophisticated assessment by way of impressions, insights, and reactions of the community which sends its children to the school; of employers of students; of new echelons of teachers of students; the wives, husbands, and cronies of ex-students; the people with whom ex-students work; the people who work under them. It will look into the questions of what games ex-students play; what, if anything, they do about politics and crime in the streets; what they read, if they do; what they watch on TV and what they make of what they watch, again, if anything. Such studies would be undertaken, furthermore, not as mass study of products of the American school taken *in toto* but of significantly separable schools and school systems, suburban and inner-city, Chicago and Los Angeles, South Bend and Michigan City.

I emphasize sensitive and sophisticated assessment because we are concerned here, as in the laying of background knowledge of what goes on in schools, not merely with the degree to which avowed objectives are achieved but also with detecting the failures and frictions of the machine: what it has not done or thought of doing, and what side effects its doings have had. Nor are we concerned only with successes and failures as measured in test situations but also as evidenced in life and work. It is this sort of diagnosis which I have tried to exemplify in a recent treatment of curriculum and student protest.*

Practical Curriculum: Anticipatory Generation of Alternatives

A third facet of the practical, I shall call the anticipatory generation of alternatives. Intimate knowledge of the existing state of affairs, early identification of problem situations, and effective formulation of problems are necessary to effective practical decision, but they are not sufficient. Effective decision also requires that there be available to practical deliberation the greatest possible number and fresh diversity of alternative solutions to problems. One reason for this requirement is obvious enough: The best choice among poor and shopworn alternatives will still be a poor solution to the problem. A second aspect is less obvious. Many of the problems which arise in an institutional structure which has enjoyed good practical management will be novel problems, arising from changes in the times and circumstances and from the consequences of previous solutions to previous problems. Such problems, with their strong tincture of novelty, cannot be solved by familiar solutions. They cannot be well solved by apparently new solutions arising from old habits of mind and old ways of doing things.

A third aspect of the requirement for anticipatory generation of alternatives is still less obvious. It consists of the fact that practical problems do not present themselves wearing their labels around their necks. Problem situations, to use Dewey's old term for it, present themselves to consciousness, but the character of the problem, its formulation, does not. The character of the problem depends on the discerning eye of the beholder. And this eye, unilluminated by possible fresh solutions to the problems, new modes of attack, new recognitions of degrees of freedom for

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* Schwab, Joseph J. *College Curriculum and Student Protest.* Chicago: University of Chicago Press, 1969. 303 pp.

change among matters formerly taken to be unalterable, is very likely to miss the novel features of new problems or dismiss them as "impractical." Hence the requirement that the generation of problems be anticipatory and not await the emergence of the problem itself.

To some extent, the *theoretical* bases of curricular change—such items as more sophisticated conceptions of scientific enquiry, discovery learning, structure of the disciplines, and creativity—contribute to the need for anticipatory solution to problems but not sufficiently or with the breadth which permits effective deliberation. That is, these theoretic proposals tend to arise in single file, each of them out of connection with other proposals which constitute alternatives to them, or, more important, out of connection with other matters which constitute circumstances which ought to affect the choice or rejection of proposals. Consider, in regard to the problem of the "single file," only one of many relations which exist between the two recent proposals subsumed under "creativity" and "structure of knowledge." If creativity implies some measure of invention and if "structure of knowledge" implies (as it does in one version) the systematic induction of conceptions as soon as children are ready to grasp them, an issue is joined. To the extent that a child is effectively conditioned to bring an induced, imposed, body of conceptions to bear on each of a number of subject matters automatically perceived as requiring conceptions a——d and not conceptions p——t, to that same extent the scope for creativity is curtailed. On the other side, to the extent that children are identified as capable of profit from creativity "training" and are encouraged to treat subject matters in unusual or whimsical ways, to that extent the putative benefits accruing from inculcated and clearly directed "organizers" are foreclosed. Only if the two were carefully considered *together,* with particularized practical concern for how much is done of each, to whom, and with what timing relative both to the child's development and to each other, is a durably effective improvement in education at all likely.

A single case, taken from possible academic resources of education, will suggest the new kind of enquiry entailed in the need for anticipatory generation of alternatives. Over the years, critical scholarship has generated, as remarked earlier, a dozen different conceptions of the novel, a dozen or more ways in which the novel can be read, each involving its own emphases and its own arts of recovery of meaning in the act of reading. Novels can be read, for

example, as bearers of wisdom and insights into vicissitudes of human life and ways of bearing them. Novels can also be read as moral instructors, as sources of vicarious experience, as occasions for aesthetic experience. They can be read as models of human creativity, as displays of social problems, as political propaganda, as revelations of diversities of manners and morals among different cultures and classes of people, or as symptoms of their age.

Now what, in fact, is the full parade of such possible uses of the novel? What is required by each in the way of competences of reading, of discussion, and of thought? What are the rewards, the desirable outcomes, likely to ensue for students from each kind of reading or combinations of them? For what kinds or classes of students is each desirable? There are further problems demanding anticipatory consideration. If novels are chosen and read as displays of social problems and depictions of social classes, what effect will such instruction in *literature* have on instruction in the *social studies*? What will teachers need to know and be able to do in order to enable students to discriminate and appropriately connect the insights of artists, the accounts of historians, and the conclusions of social scientists on such matters? How will the mode of instruction in science (e.g., as verified truths) and in literature (as "deep insights" or artistic constructions or matters of opinion) affect the effects of each? (Here, obviously, is also an instance of the need cited earlier—for control of organic connections within the school structure.)

The same kinds of questions could be addressed to history and to the social studies generally. Yet, nowhere, in the case of literature, have we been able to find cogent and energetic work addressed to them. The journals in the field of English teaching are nearly devoid of treatment of them. College and university courses, in English or education, which address such problems with a modicum of intellectual content are as scarce as hen's teeth. We cannot even find an unbiased conspectus of critical theory more complete than *The Pooh Perplex*, and treatments of problems of the second kind (pertaining to interaction of literature instruction with instruction in other fields) are also invisible.

Under a soundly practical dispensation in curriculum the address of such questions would be a high priority and would require recruitment to education of philosophers and subject matter specialists of a quality and critical sophistication which have been rarely, if ever, sought.

Practical Curriculum: Deliberation

As the last sampling of the practical, consider its method. It falls under neither of the popular platitudes: It is neither deductive nor inductive. It is deliberative.

It cannot be inductive because the target of the method is not a generalization or explanation, but a decision about action in a concrete situation.

It cannot be deductive because it deals with the concrete case and not abstractions from cases, and the concrete case cannot be settled by mere application of a principle, for almost every concrete case falls under two or more principles, and is not, therefore, a complete instance of either principle.

Moreover, every concrete case will possess some cogent characteristics which are encompassed in no principle. The problem of selecting an appropriate man for an important post is a case in point. It is not a problem of selecting a representative of the appropriate personality type who exhibits the competences officially required for the job. The man hired is more than a type and a bundle of competences. He is a multitude of probable behaviors which escape the net of personality theories and cognitive scales. He is endowed with prejudices, mannerisms, habits, tics, and relatives. And all of these manifold particulars will affect his work and the work of those who are to work for him. It is deliberation which operates in such cases to select the most appropriate man.

Deliberation is complex and arduous. It treats both ends and means and must treat them as mutually determining one another. It must try to identify, with respect to both, what facts may be relevant. It must try to ascertain the relevant facts in the concrete case. It must try to identify the desiderata in the case. It must generate alternative solutions. It must make every effort to trace the branching pathways of consequences which may flow from each alternative and affect desiderata. It must then weigh alternatives and their costs and consequences against one another, and choose, not the *right* alternative, for there is no such thing, but the *best* one.

I shall mention only one of the new kinds of activity to ensue upon commitment to deliberation. It will require the formation of a new public and new means of communication among its constituent members. Deliberation requires consideration of the widest possible variety of alternatives if it is to be most effective

Each alternative must be viewed in the widest variety of lights. Ramifying consequences must be traced to all parts of the curriculum. The desirability of each alternative must be felt out, "rehearsed," by a representative variety of all those who must live with the consequences of the chosen action. And a similar variety must deal with the identification of problems as well as with their solution.

This will require penetration of the curtains which now separate educational psychologist from philosopher, sociologist from test constructor, historian from administrator; it will require new channels connecting the series from teacher, supervisor, and school administrator at one end to research specialists at the other. Above all, it will require renunciation of the specious privileges and hegemonies by which we maintain the fiction that problems of science curriculum, for example, have no bearing on problems of English literature or the social studies. The aim here is *not* a dissolving of specialization and special responsibilities. Quite the contrary: If the variety of lights needed is to be obtained, the variety of specialized interests, competences, and habits of mind which characterize education must be cherished and nurtured. The aim, rather, is to bring the members of this variety to bear on curriculum problems by communication about them with one another.

Concretely, this means the establishment of new journals, and the education of educators so that they can write for them and read them. The journals will be forums where possible problems of curriculum will be broached from many sources and their possible importance debated from many points of view. They will be the stage for display of anticipatory solutions to problems, for a similar variety of sources. They will constitute deliberative assemblies in which problems and alternative solutions will be argued by representatives of all, for the consideration of all, and for the shaping of intelligent consensus.

Needless to say, such journals are not sufficient alone. They stand as only one, concrete model of the kind of forum which is required. Similar forums, operating *viva voce* and in the midst of curriculum operation and curriculum change, are required—of the teachers, supervisors and administrators of a school; of the supervisors and administrators of a school system; of representatives of teachers, supervisors, and curriculum makers in subject areas and across subject areas; of the same representatives and

specialists in curriculum, psychology, sociology, administration, and subject matter fields.*

A downright pathetic sign of the great need for such face-to-face confrontation and journal forums and for an education in their uses appears in the educational literature. The sign consists of the frequency with which reviews and critical papers say of the materials under review: "This is a *scientific* treatment of the enquiry problem." "This is an interesting *hortatory* book." "This is a plea for creativity training but the author provides no data to *prove* his point." "The author *feels* that arithmetic ought to be taught so as to provide insight into arithmetic processes. . . ." "Not a *research* article."

Again and again, the prevailing distinction is the limited one of "scientific" or "hortatory," theoretic or homiletic. Of course, "review" papers and "methodological" papers are recognized, but these, too, are usually seen as dealing with just the other two: scientific or hortatory. There is little visible discrimination of the mere special or interested pleading for a "cause" (the hortatory) from papers which propose alternatives to present or envisaged practices, discriminate possible consequences (good or bad) of alternatives, trace these consequences to their further probable effects, and in other ways contribute to the responsible deliberation necessary for defensible choices of new or altered practices. Either the educationist community has no common apparatus for recognizing such papers or few of them are written—or both.

The education of educators to participate in this deliberative process will be neither easy nor quickly achieved. The education of the present generation of specialist researchers to speak to the schools and to one another will doubtless be hardest of all, and I have no suggestion to make on this hardest problem. But we could begin within two years to initiate the preparation of teachers, supervisors, curriculum makers, and graduate students of education in the uses and arts of deliberation, and we should.

For graduate students in education, this should mean that their future enquiries in educational psychology, philosophy of educa-

* It will be clear from these remarks that the conception of curricular method proposed here is immanent in the Tyler rationale. This rationale calls for a diversity of talents and insists on the practical and eclectic treatment of a variety of factors. Its effectiveness in practice is vitiated by two factors. First, its focus on "objectives," with their great ambiguity and equivocation, provides far too little of the concrete matter required for deliberation and leads only to delusive consensus. Second, those who use it are not trained for the deliberative procedures it requires.

tion, educational sociology, and so on will find more effective focus on enduring problems of education, as against the attractions of the current foci of the parent disciplines. It will begin to exhibit to graduate students what their duties are to the future schoolmen whom they will teach. For teachers, curriculum makers, and others close to the classroom, such training is of special importance. It will not only bring immediate experience of the classroom effectively to bear on problems of curriculum but will also enhance the quality of that experience, for almost every classroom episode is a stream of situations requiring discrimination of deliberative problems and decisions thereon.

By means of such journals and such an education, the educational research establishment might at last find a means for channeling its discoveries into sustained improvement of the schools instead of into a procession of ephemeral bandwagons.

ABOUT THE AUTHOR

Joseph J. Schwab, the man who writes here of the practical and the theoretical, drawing his examples and insights from both education and the natural sciences, has a long history of activity in and across the two disciplines. In addition to being professor of education and William Rainey Harper Professor of the Natural Sciences at the University of Chicago, he is presently chairman of the Academic Board of the Melton Center for Research in Education.

After receiving his undergraduate degree in English literature from the University of Chicago, he did his graduate work in biology, specializing in mathematical genetics, and received the doctorate from the University in 1938. Mr. Schwab became involved in educational experiments early in his career, serving first as an instructor in the College of the University from 1936 to 1938 and then as professor of the natural sciences, professor of education, examiner in the biological sciences, and chairman of the natural sciences in the College.

His early publications in genetics appeared in *The American Naturalist* and *Genetics*. His publications on educational theory and practice and the philosophy of science have appeared in such journals as *Bios, Journal of General Education, School Review, Ethics, Behavioral Science,* and *The Atlantic.* His larger publications include *The Teaching of Science as Enquiry* (Harvard Press) and *College Curriculum and Student Protest* (University of Chicago Press).

From 1959 to 1961 he was chairman of the Committee on Teacher Preparation of the Biological Sciences Curriculum Study of the American Institute on Biological Sciences and in 1960 served as editor of the first experimental editions of its textbooks.

Mr. Schwab has concerned himself with the training of investigators in the field of education, with the preparation of teachers for liberal and general programs in higher and secondary education, and with the development of liberal curriculums in institutions of higher learning.